

CE 306: Estimating Costing and Evaluation (3-0-0: 3)

Course objectives: The objective is to develop in the student the art and skill whereby a monetary value can be placed on the volume of work previously measured; To develop an awareness of those factors that affect the cost of construction work and to analyze the influences that effect change in these factors; To encourage the habit of systematically recording all those statistics which are the stock in trade of the good estimator.

Estimate of Building

Different items of works as per CPWD/APWD schedule such as earthwork, brickwork, cement-concrete, RCC-floors, roofs, openings, painting, white & colour washing, plastering etc.

RCC Works & structures

Different items of RCC work – RCC, shuttering, measurement of reinforcing bars, standard hooks & bends, Bar-bending schedule, Estimate of RCC beam, slab column, footing & staircase.

Roads & Bridges

Introduction to the different items as per CPWD/APWD schedule, estimate of earthwork of road, estimate of metalled road, estimate of RCC slab culvert, T-beam decking, Pier & well foundation, Pipe Culvert.

Analysis of Rates

Analysis of Rates of Building works-RCC, PCC, Brickwork, Plastering, flooring, colour wash, Distempering, cement painting, woodwork, DPC, Doors & Windows, Roofing.

Specifications

General specifications for building works-RCC, Brickwork, Plastering, Flooring, Painting, white & colour wash, Woodworks, Doors & windows, DPC, terracing, rainwater exclusion, specifications for Roadwork.

Valuations

The mathematics of valuation, valuation of freehold & leasehold properties, Fixation of Rent, Methods of valuation, Investment Method, Comparison Method, Residual Method, rein-statement Method, Contractors Method. Methods of valuation of land-comparative method, abstractive method & belting method.

Text Books:

1. Dutta, S. "Estimating and Costing in Civil Engineering", Datta & Co.
2. Bhasin, P.L., "Quantity Surveying", 2nd Edition, S.Chand & Co..

References:

1. Dutta, B.N., "Estimating and Costing", Kalyani Publication, Calcutta.
2. Rangwala, S.C., "Valuation of Real Properties", Charoter Publisher, Pune.
3. Patil, B.S., "Civil Engg. Contracts & Estimates", Orient-Longman Ltd., New Delhi.
4. CPWD, "CPWD specifications Vol-I, II, III, &IV", Join Book Agency, New Delhi.
5. CPWD, "CPWD Analysis of Rates", Join Book Agency, New Delhi.

Expected outcome: The student will be able to: Identify and differentiate between the two types of estimate; Prepare a format for preparation and presentation of an estimate; Draw up a check list for estimate control; Define a lump sum estimate; Define a unit cost estimate; Identify the main sources of current and forecast labour rates; Give at least three sources for labour production rates; Calculate the production rates of a variety of tradesmen in a given job

example; List the factors that contribute to the estimation of overhead costs; Describe the types of taxes peculiar to construction work; Identify the nine forms of insurance normally employed in the construction industry; Identify the purpose and costs of the three forms of bond used in construction industry; List the factors affecting the selection of a profit value on a bid.
